Customer No.: 31561
Application No.: 10/064,465
Docket No.: 8905-US-PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:		I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on
Application No.:	10/064,465	
Filed:	July 17, 2002	
For:	AUGMENTING SURFACE ELECTRODE FOR PIEZOELECTRIC WORKPIECE	
		(Date)
Applicant:	Yu-Hsiang Hsu	
Examiner:	Aguirrechea, Jaydi A.	
Art Unit	2834	

RESPONSES TO OFFICE ACTION

U.S. Patent and Trademark Office
Commissioner for Patents
2011 South Clark Place
Customer Window, Mail Stop **Non-Fee Amendment**
Crystal Plaza Two, Lobby, Room 1B03
Arlington, Virginia 22202

Dear Sir:

In reply to the Office Action dated December 11, 2003, Applicant respectfully submits the following Amendments and Remarks.

AMENDMENTS

Please amend the application as indicated hereafter.

1. (original) A piezoelectric workpiece for electrically connected in an electric circuit for energy conversion between electrical and mechanical forms in a piezoelectric system, said piezoelectric workpiece comprising:

a body of piezoelectricity for implementing said energy conversion;

a plurality of function electrodes each fixedly attached to the surface of said body, said plurality of function electrodes being connected in said electric circuit for implementing said energy conversion; and at least one of said function electrodes having a shape with a contour of at least one acute angle; and

at least an augmenting surface electrode fixedly attached to the surface of said body proximate to said acute angle, said augmenting surface electrode and said proximate function electrode thereof constituting a gross electrode substantially canceling said acute angle when connected electrically to the same electric potential.

2. (original) The piezoelectric workpiece of claim 1, wherein said at least one augmenting surface electrode has a shape that is substantially elongated.

3. (original) The piezoelectric workpiece of claim 2, wherein said at least one augmenting surface electrode of substantially elongated shape has at least one smooth edge opposite to said acute angle of said proximate function electrode.

4. (original) The piezoelectric workpiece of claim 1, wherein said at least one augmenting surface electrode has a shape that is substantially a closed-loop ring surrounding said proximate function electrode.

5. (original) The piezoelectric workpiece of claim 4, wherein said at least one augmenting surface electrode of substantially closed-loop ring has at least one smooth edge opposite to said acute angle of said proximate function electrode.

6. (original) A piezoelectric workpiece for electrically connected in an electric circuit for energy conversion between electrical and mechanical forms in a piezoelectric system, said piezoelectric workpiece comprising:

a body of piezoelectricity for implementing said energy conversion; and

a plurality of function electrodes each fixedly attached to the surface of said body, said plurality of function electrodes being connected in said electric circuit for implementing said energy conversion; at least one of said function electrodes having a shape with a contour of at least one acute angle; wherein

at least a polarization augmenting electrode being pressed onto the surface of said body proximate to said acute angle during the fabrication of said piezoelectric workpiece;

said polarization augmenting electrode and said proximate function electrode thereof constituting a gross electrode when connected electrically together, said gross electrode substantially canceling said acute angle when paired with one of said function electrodes and connected to a polarization voltage; and

said polarization voltage polarizing electric dipoles of grain molecules of said body in between said pair during said fabrication of said piezoelectric workpiece so that the boundary region between different polarization orientation distribution regions within said piezoelectric workpiece are smoothed without any acute angle.

7. (original) The piezoelectric workpiece of claim 6, wherein said at least one polarization augmenting electrode has a shape that is substantially elongated.

8. (original) The piezoelectric workpiece of claim 7, wherein said at least one polarization augmenting electrode of substantially elongated shape has at least one smooth edge opposite to said acute angle of said proximate function electrode.

9. (original) The piezoelectric workpiece of claim 6, wherein said at least one polarization augmenting electrode has a shape that is substantially a closed-loop ring surrounding said proximate function electrode.

10. (original) The piezoelectric workpiece of claim 9, wherein said at least one polarization augmenting electrode of substantially closed-loop ring has at least one smooth edge opposite to said acute angle of said proximate function electrode.

11. (original) The piezoelectric workpiece of claim 6, wherein said at least one polarization augmenting electrode is pressed onto the surface of said body only during said fabrication and is removed after said fabrication.

Claims 12-22 (canceled)